

6
A F E W R E M A R K S

ON THE

TREATMENT

OF

PLEURISY AND EMPYEMA,

WITH CASES.

BY

D. M. WILLIAMS, L.K.Q.C.P.I.,

PHYSICIAN TO LIVERPOOL HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST,
ETC., ETC.

Reprinted from the Dublin Journal of Medical Science—May, 1878.

D U B L I N :

PRINTED FOR THE AUTHOR

BY JOHN FALCONER, 53, UPPER SACKVILLE-STREET

1878.

A FEW REMARKS ON THE TREATMENT

OF

PLEURISY AND EMPYEMA,

WITH CASES.^a

MR. PRESIDENT AND GENTLEMEN,—In describing the few cases of empyema and pleurisy, which it is my purpose to bring before you this evening, I will avoid needless details of symptoms, and reference to the work of others, with which you are all, doubtless, familiar, and confine myself to such cases as will illustrate my remarks, in order to save valuable time.

I will give but a brief history of the first case, as it has been already reported in full in the *British Medical Journal*, December 112th, 1874:—

CASE I.—The patient was thirty-eight years of age—a prosperous man of business—and the attack an unusually severe one. The heart was soon pushed to the right side, and the breathing so difficult that I was compelled to tap him on the twentieth day of his illness, removing 108 ozs. of pus, and again, a week afterwards, removing 50 ozs. The odour of the pus was most offensive, and needed, as was remarked at the time, a pathological nose to endure it. I had sought Dr. Cameron's opinion of the case, and he considered the attack secondary, and that probably the lung was tuberculous, as he had never known a case where the constitutional disturbance was so great, unless there had been previous mischief. The condition of the pus seemed to support Dr. Cameron in this opinion, there being no fistulous communication through which air could have gained admission to the pleural cavity. The result, however, was a perfect recovery; and the patient is now the healthiest-looking man in the firm with which he is connected; still, the lung is, to a large extent, bound down.

^a Read before the Medical Society of the King and Queen's College of Physicians, Wednesday, April 3, 1878.

In this case I washed out the pleural cavity daily for thirty-one days with a weak solution of sulphurous acid, as the patient preferred it to the carbolic acid which I used two or three times. I must not omit to mention, however, that there was no real improvement up to the twentieth day after the operation—the pus being still very offensive; I, therefore, enlarged the wound with a probe-pointed bistoury; and, on washing out the pleural cavity the wound became suddenly blocked, and I managed to remove two pieces of false membrane (?), horribly offensive, after which the whole aspect of the case changed, and the patient slowly but steadily recovered.

CASE II.—A gentleman in Shropshire, aged thirty, who always enjoyed excellent health, got a severe wetting in a heavy shower of rain and could not change his clothes for more than two hours. Next morning he felt very feverish, with a pain in right side. In a few days there was dulness, which was attributed to pneumonia; the cough became very troublesome, but expectoration scanty and glairy; no blood, nor anything like it. During the fifth week of his illness, he suddenly expectorated a quantity of purulent matter; and it was now considered that a large abscess had formed in the lung and burst. Two medical men who saw him considered the case hopeless, and gave the poor fellow three weeks to live. The patient's brother (a homœopathic physician), having come from a distant town to see him, gave the same opinion, and treated him for a short time with globules of phosphorus, which made the patient so very sick that he returned to the family doctor, at whose request I was asked to see the case. Dr. ——— had candidly confessed that he was completely puzzled; and, when I arrived, requested me to express my opinion freely in the patient's presence after I had examined him.

I found the patient covered with perspiration, wasted by hectic, with a constant cough, and the whole right side dull; no movement in respiration, nor vocal fremitus; the right side seemed smaller than the left; no bulging nor increase of intercostal spaces; on left side the breathing was puerile, but otherwise healthy. This, with the history of the case, made it quite clear to my mind that it was one of empyema, with a fistulous opening into a bronchial tube; but, as this fistula had existed for several weeks without any real improvement, it evidently did not afford that relief the system needed. The case was fully explained to the patient and friends, and a counter-opening made by tapping. The relief obtained, with the assurance that he would, in all probability, ultimately recover—though after a long illness—quite altered the whole aspect of matters, and brought hope and gladness where there was nothing but sorrow before. He steadily recovered; and, as soon as able, removed to

the south of England, and was doing well when I heard last from him, twelve months after my visit.

CASE III.—A. W., aged nineteen, was taken suddenly ill, in June, 1875, with cough, &c.; and, after a long illness, was told he could not recover, as he was consumptive. In spring of 1876 he went to Wales, and improved so much that he remained there the whole summer; but was again ill during the winter of 1876 and 1877. In the spring of 1877 he went again to Wales; but this time he caught a severe cold, he coughed, and the leading doctor of the place said he could not get well. He now heard of Congreave's specific for consumption (15s. per bottle), and took it for several months, with such decided improvement that Congreave was considered a great benefactor. He improved so much that he could climb the hills with comfort. But, on his return journey to Liverpool, he spat blood; and I saw him for the *first time*, October 17, 1877.

A tall, dark-haired man, aged twenty-one, very thin; fingers clubbed and nails incurved; cough troublesome. On examination I found, on left side, dulness posteriorly and tubular breathing; in front the ribs were quite flattened, no respiratory sounds could be heard; at apex there was coarse, moist râles. Right side very resonant; breathing puerile, except at apex, where there was slight dulness on percussion, with prolonged expiratory murmur, and more than the usual increase of vocal resonance. It had evidently been a case of pleurisy with effusion—perhaps a case of empyema; the fluid had been removed by expectoration during the two and a-half years of his illness, but at the cost of a flattened side and useless lung, with tubercle commencing in the other lung. He caught bronchitis on November 7th, and died of hæmoptysis, November 9.

I cannot but regret that the nature of this young man's case was not ascertained sooner, as he must have had a good constitution to endure this long illness, and might possibly have recovered altogether had he been tapped in 1875—especially as he had (like Cases I. and II.) ample means, and could have had every help in the way of change of air, &c.

CASE IV. is that of a girl, aged eight years, who had the usual symptoms of acute pleurisy of left side. On the twenty-fifth day of illness the breathing was so laboured that I visited her in the evening, with my neighbour, Dr. Kirk, intending to aspirate her, but deferred the operation until the following morning, at the earnest solicitations of her mother.

The same night I was sent for in haste, as the child was thought to be dying. I found her nearly suffocated by a profuse flow of pus, which she could scarcely get rid of fast enough to enable her to get breath; a fistu-

lous opening had evidently formed, and the pus was being evacuated without my assistance.

She made an excellent recovery; and I found, on examining the chest four months afterwards, that there was not the slightest dulness anywhere, nor any indications of her very severe illness.

CASE V.—November 21, 1877, Dr. Edis asked me to see a child, two years old, who was nearly suffocated by pleuritic effusion. We found the little thing fairly fighting for breath; and the mother said that the child had been ill six weeks; that she had taken her to the Homœopathic Dispensary, the Children's Infirmary, and the East Dispensary, and that they all said the child had bronchitis.

Right side was dull all over, and seemed smaller than left; immovable in respiration; vocal fremitus absent; no widening nor bulging of intercostal spaces. Left side resonant, and breathing very noisy. I introduced a moderate-sized needle of the aspirator, and, with considerable difficulty, removed several ounces of very thick pus. The child was greatly relieved; but the wound closed; so we inserted a drainage tube on the 25th, making the lower and posterior wound about an inch from the angle of the scapula. The pus escaped freely; and the little thing was doing well the last time I saw her, about a week after the operation. Subsequently, however, Dr. Edis informed me, she began to sink, and died from exhaustion, while the chest seemed to be going on most favourably.

I will not now occupy time in recording the histories of cases of pleurisy with serous effusion, but only remark that they usually take from six weeks' to six months' time before the fluid is absorbed, if it has been thrown out in any considerable quantity; but notwithstanding the longest time (six months), such cases have done well in my practice, the lung expanding once more. I feel, therefore, encouraged to treat these with diuretics, iodine, &c.

Nevertheless, as an illness of two or three months is often a very serious matter to the patient—sometimes causing the loss of employment or of business—I have asked myself if there was no way by which we could hinder the effusion of serum, or, at least, its accumulating in any great quantity? When we remember that the sharp stitch in the side in pleurisy, caused by the friction of the two inflamed surfaces, is intended to limit the movement of the lungs, we cannot but feel that Nature has already given us the hint—stop respiratory movements and the mischief is prevented. We have already recognised this principle in peritonitis, synovitis, &c. Here, however, we have to do with an organ whose function

cannot be stopped with safety to the patient; but I do think we can sufficiently limit the movements of *one* lung so as to hinder the formation of, at any rate, a large quantity of fluid in the chest; and this I have attempted to do by strapping the inflamed side firmly with plaster, taking care to bring the ends of the plaster to the opposite side of the spine and sternum.

The first result of such treatment is, a great relief from pain; the next is, a subsidence of fever, &c. To say that a few cases have been thus treated successfully is to prove nothing, as it may be reasonably urged that these were slight ones, or only dry pleurisy; a medical friend, however, has, at my request, already treated eight successive cases successfully. From my own practice I will give only one case:—

CASE VI.—J. B., aged eleven; always a delicate child; had pneumonia two years since, and confluent small-pox six months after. Soon after his recovery from small-pox a large lumbar abscess formed, “which was allowed to burst of its own accord,” leaving a sinus which leads to the *third* lumbar vertebra. He has also strumous disease of the metacarpal bone of little finger, and second and third phalanges of middle finger, and second phalanx of thumb—all on left hand. Add to this a pale face and bones covered with little besides skin, and I think you will admit that he was altogether an unfavourable subject for acute pleurisy.

His illness commenced on Friday, December 28, 1877, and I saw him on the following Sunday evening. He was then crying out from pain in his right side, especially when he coughed; skin hot; pulse 120; friction sound distinctly audible, and the line of dulness seemed higher than what the liver would account for. As it was raining in torrents, I could not send for my usual plaster, but got some soap cerate plaster from a neighbouring chemist, and with this bound him up firmly. In a few minutes the pain was so much relieved that I felt very much gratified; but, as it was not gone, I ordered two drops of laudanum every three hours.

January 2nd.—He felt so much better that he wished to get up; skin cool; pulse 100; cough very slight; no pain; no more dulness; vocal fremitus quite perceptible.

January 4th.—So much better every way that I allowed him to get up, but not to leave his room, and ordered him half-grain doses of quinine three times daily, and cod-liver oil (3ii.) once a day—treating his general state of health rather than the pleurisy.

January 7th.—When I entered his room this morning, he was laughing heartily; and, finding all apparently going on very nicely, I dismissed him, only giving his mother directions about him.

I consider this a very valuable case, as the probability is, seeing

his age and constitution, that the effusion would have been purulent *ab initio*.

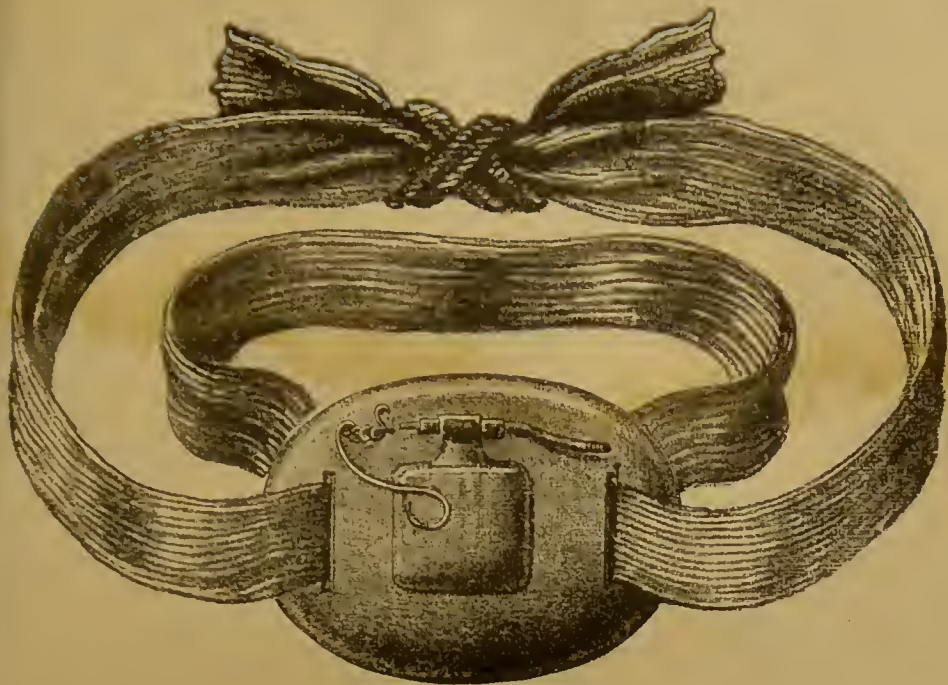
Since writing the above, I have heard that an American surgeon has claimed all thoracic diseases for the domain of surgery, and treats all such by pressure, but not exactly strapping; while Dr. Fred. Roberts has, I find, already advocated strapping.

Again, with reference to empyema, I wish to dwell especially on the condition of the lung after recovery. It is pretty generally admitted that in children under twelve years of age, such cases usually end well—the lung expanding again, whatever may have been the amount of mischief; while in adults this is rarely the case—the lung being almost always so damaged as to be unable to support life *alone*. This is surely not a *cure* in which we can take much comfort, however brilliant the recovery may appear to the patient and his friends—as in Cases I. and II. On the contrary, we should not, I think, consider such cases *cured* unless the lung once more occupies its normal situation.

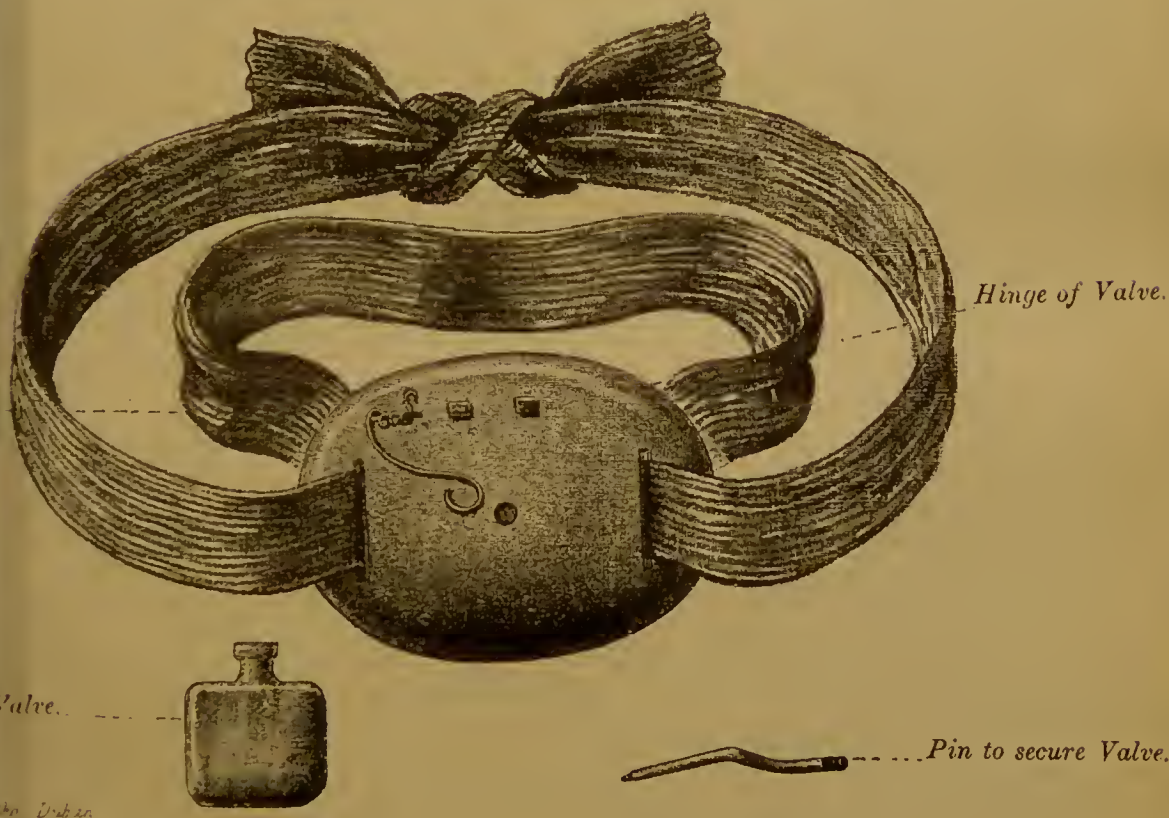
I have asked myself the reason why the lung should expand so easily in children and scarcely ever do so completely in adults; and I think the condition of the ribs in children explains it. Thus, in children the ribs yield rather readily to the atmospheric pressure without losing their spring; consequently, there is not left the same amount of empty space in the chest, when the fluid is removed, as in an adult, while, at the same time, there is a constant suction-power from the tendency the ribs have to resume their natural curve. In the adult the ribs yield much less readily, but eventually become bent in permanently. Now, it has occurred to me that, if we could find some plan of keeping the pleural cavity more or less constantly in a state of vacuum before the ribs bend, without using injurious force, we would help the lung to expand; and for this purpose I have invented a canula with very delicate valve, which, by acting only one way, allows fluid or air to escape from the chest, but instantly hinders air entering it.

Now, admitting that a patient, with this tube *in situ*, coughs only twice each hour, the force of coughing easily expels fluid out through this tube, while the valve effectually hinders the entrance of air into the pleural cavity. Thus more or less of a vacuum is formed; and in proportion to the amount of vacuum is the aid given to the air rushing through the trachea to expand the lung.

The canula has been purposely made short, in order that it may be worn until the lung expands pretty freely. It is secured in its



CANULA WITH VALVE REMOVED FOR TROCAR.



The trocar is the size used for hydrocele ; the stem of the canula, however, is made shorter and the head much larger, quite flat and oval, with a slit at each end for tape, spring to one side, and two fixed eyes for the valve on the upper margin. After reduction, the valve is slipped under the spring with its eye between the two fixed eyes and the pin thrust through, making a hinge.

position by tapes passed through the slits on either side, and over it should be placed a large cup-shaped sponge, wrung out of a warm solution of carbolic acid (1 to 40), to receive the pus, and a piece of oil-silk to protect the clothes, and a lightly applied bandage to keep all in position.

Seeing, then, that pleurisy, if detected at the commencement, may be greatly relieved, and effusion to any great extent hindered, by firm strapping, it becomes exceedingly important to detect it early. There is, of course, no difficulty in doing this when effusion has already taken place; but, previous to this, I consider it no easy matter to do so in children; and I am not at all surprised that Case V. should have been overlooked at the dispensaries. The pain in the side and friction-sound, upon which we depend so much in the adult, are of but little use in dealing with children, and I have adopted the following plan:—Suppose a child two years old; very cross and feverish, with a slight cough, and these symptoms not explained by any other disease. I wrap the child loosely in a blanket, and, having put it sitting on its mother's knee, wait a minute or two; presently it coughs and immediately cries. Now put it sitting upright, and watch carefully; next time it coughs you will notice it shrinks to one side. Place a warm flannel on that side, and let the mother keep up firm pressure; the child coughs again, but the crying and shrinking are less; and if, on very careful examination, there is slight dulness, and respiration a little feeble, without crepitation, we may be sure that we have a case of pleurisy; and if that side be strapped, the child will probably have a good night, and be much better next morning.

Supposing effusion to have already taken place (and the patient be a child), the fluid should be removed at once, *if the constitutional disturbance is great*, as in all probability it is purulent—serous effusions giving comparatively little indication of their presence, unless the quantity of fluid is great—indeed, I have been often surprised at the small amount of constitutional disturbance where I have found a large quantity of fluid, in both children and adults. If a doubt exists, the needle of the hypodermic syringe may be used to explore, as recommended by Dr. Barlow and Mr. Parker; but in an adult I would seek to be guided entirely by the constitutional disturbance, which, I think, is much greater where the effusion is purulent.

If, in a child, a fistulous communication with a bronchial tube has already occurred, and pus is being freely expectorated, I would

first strap the side and wait a few days, as this seems to be Nature's best and most successful mode of removing pus from the cavity of the pleura in children (while fistulæ through the thoracic parietes almost always end badly). Should the relief be insufficient or the strength giving way, I would then tap the side; but, in the case of an adult, I would tap at once, notwithstanding that a fistula had occurred, as I have not seen a single such case do well without tapping.

The pleural cavity should be freely washed out with a weak solution of carbolic or sulphurous acid, or iodine; and if, after a week or two, the pus remains fœtid, the wound should be enlarged with a probe-pointed bistoury, in order to give exit to any pieces of false membrane or clots of blood which may be decomposing, as in Case I.

There is nothing remarkable in these cases; their interest lies rather in the fact that we are all more or less frequently called upon to treat them. Nor is there much that is new in the treatment advocated, except it be the valved cannula, which I hope some present will put to the test.

In conclusion, I desire to say that it is in no carping spirit that I have referred to the failure of others, as it would ill become me to do so—but simply to illustrate the difficulties which, after all, surround a subject with which we are all supposed to be quite familiar.





